

German/Translation

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**Applicant: Michael Stanluk**

**Inventor:**

**Michael Stanluk**

**Representatives:**

**Meyer & Partner, Hamburg**

**Title:**

**TOROIDAL TANK FOR LIQUID GAS**

**Summary**

The invention concerns a tank for liquid gas with a head piece for a multiple valve group. According to the invention the tank has a valve block in the form of a separate group which contains a side wall (4) and a floor (3) in which a multiple valve head and pipelines (6) for withdrawing and for filling, the entire valve block being covered with a lid (7) and is affixed firmly and tightly in the tank (1).

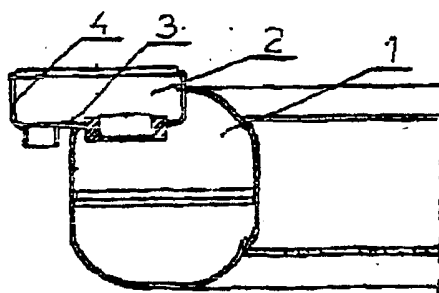


FIG 1

### Description

The present invention concerns a toroidal tank for liquid gas.

From EP 0 473 555 a toroidal tank is known in which on the sides directed toward the center of the tank at least two head pieces are provided for valve groups. The valves are coordinated with at least one headpiece, and the headpiece can be inserted into the tank floor.

Two pipelines, a withdrawing and a filling line run through the hollow space of the tank center which is closed by an upper and a lower lid. The two lids are screwed to the tank by screwing elements as a result of which they are pressed against the outer surface of the tank.

A disadvantage and an inconvenience of the known design is the fact that the hollow space in the center of the tank is closed and cannot be used for other purposes such as for fixation of the tank. The utilization of the hollow space for the assembly of a valve group and pipelines requires the fixation of two lids, the upper and the lower, which causes the necessity of sealing both marginal/border strips. In addition braces must be present to affix the two lids and screws for fixation of the multivalve group.

In order to simplify the above solution the tank according to the invention with the headpiece for the multivalve group displays a valve block in the form of a set which consists of a side wall and a floor in which a multivalve head and two pipelines, a withdrawing and a filling line, are placed, said entire valve block being covered with a lid and is firmly and tightly affixed in the tank.

The valve block is affixed in the tank in such a way that the floor with the part with pipelines extends out past the contour of the tank.

In another variant the valve block is affixed to the tank in such a way that the floor is entirely inserted into the tank and the pipelines extend through the side wall.

The invention is explained in the appended drawing in which

Figure 1 shows a toroidal tank with a valve block in a cross half section in which the part of the floor with the pipelines extends outward past the tank contour,

Figure 2 shows a toroidal tank with a valve block in the cross half section in which the bottom part with the pipelines extends into the inner space past the tank contour, and

Figure 3 is toroidal tank in half cross section in which the entire valve block floor is inserted into the tank.

A toroidal tank for liquid gas according to the invention consists of the toroidally shaped tank 1 with a valve block 2. The valve block 2 has a floor 3 and a side wall 4. The floor 3 contains a head piece 5 for the multivalve and openings with two affixed pipelines 6 for withdrawing and filling with fuel.

In the version shown in Figures 1 and 2 the valve block is welded into the tank in such way that the floor 3 with the part on which the pipeline 6 end extends past the tank contour, either outside of the tank 1 or into the center of the tank 1.

Figure 3 shows a tank version 1 in which the entire valve block 2 is inserted into the tank so that the pipelines 6 pass through the opposite wall 8 of the tank 1.

In the examples of embodiment the tank 1 itself consists of an upper floor 9, a lower floor 10 and a central part in the form of a profiled pipe 11.

#### Reference symbols

- |    |                 |
|----|-----------------|
| 1  | tank            |
| 2  | valve block     |
| 3  | floor           |
| 4  | side wall       |
| 5  | multivalve head |
| 6  | pipelines       |
| 7  | lid             |
| 8  | wall            |
| 9  | upper floor     |
| 10 | lower floor     |
| 11 | profiled pipe   |

#### Claims

1. Toroidal tank for liquid gas with a head piece for a multivalve group characterized by the fact that it displays a valve block (2) in the form of a separate group which contains a side wall (1) and floor (3) in which a multivalve head (5) and two pipelines (6) for withdrawing and filling with gas are provided, the entire valve block (2) being covered with a lid (7) and fastened firmly and tightly in the tank (1).

2. Toroidal tank as in claim 1 characterized by the fact that the valve block (2) in the tank (1) is affixed in such a way that the floor (3) with part of the pipelines (6) extends past the contour of the tank (1) to the outside or to the inside.

3. Toroidal tank as in claim 1 characterized by the fact that the valve block (2) is affixed in the tank (1) in such a way that the floor (3) is fitted entirely into the tank, and the pipelines (6) extend through the wall (8) of the tank.

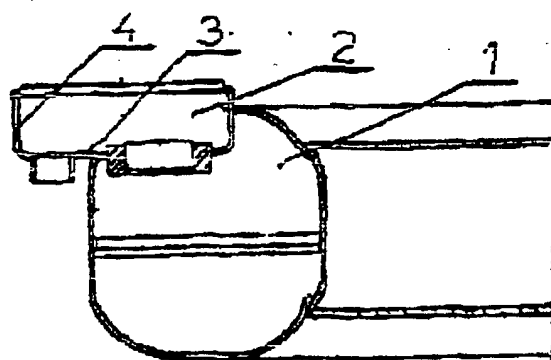


FIG 1

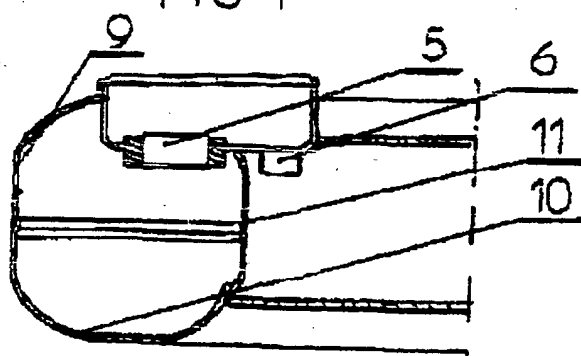


FIG 2

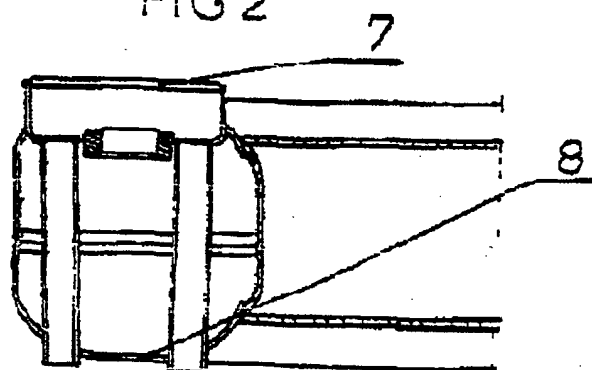


FIG. 3

DOCUMENTS CONSIDERED TO BE PERTINENT			
Category	Citation of document with indication if necessary of pertinent parts	claims	INT. CL. OF AP- PLICATION
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			<u>Areas searched</u>  F17C
Location of search The Hague		Date of search 25 January 2000	Examiner Meetens, J
<p><b>CATEGORY OF DOCUMENTS CITED</b></p> <p>X: especially pertinent alone</p> <p>Y: especially pertinent in combination with another document of same category</p> <p>A: technological background</p> <p>O: unwritten disclosure</p> <p>P: interim literature</p> <p>T: theory or principle at basis of invention</p> <p>E: older patent document only published on or after the application date</p> <p>D: document cited in the application</p> <p>L: document cited for other reasons</p> <p>.....</p> <p>&amp; Member of same patent family, concordant document</p>			

**ANNEX TO THE EUROPEAN SEARCH REPORT  
ON THE EUROPEAN PATENT APPLICATION NFL      EP 99 11 2659**

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